



PROFILES IN soil health

Dick Sloan

725 Acres

No-till Corn, Soybeans, Small Grains

Planting: Cover Crop Mix

unlock the
SECRETS
IN THE
SOIL

Iowa Farmer Mixed Up in Cover Crops.

When soil and water conservation professionals began encouraging farmers to implement practices that help improve soil health – instead of focusing primarily on reducing soil erosion – it made perfect sense to Buchanan County farmer Dick Sloan. With a biology background, he knew that fewer soil disturbing activities and more living roots in the ground meant more sustainable, productive soils.

He also knew that conservation practices that improve soil health would help reduce soil erosion and improve water quality. “A lot of Iowa farm publications started having stories about cover crops and soil health, and that really drew on my biology background,” he said.

Sloan received a Bachelor’s degree in biology from Iowa State University in 1978, and began farming



Soybeans begin to pop through crop residue and terminated cover crop mix on Dick Sloan's farm near Rowley, Iowa, in Buchanan County.

near his hometown of Brandon shortly thereafter. For years, he closely managed his farm with erosion control practices such as no-till, terraces and grassed waterways. But more recent exposure to groups like Practical Farmers of Iowa (PFI), as well as reading articles, attending conferences, field days, and

meetings about soil health, opened his eyes to a new way to think about the soil.

"As I listened to experts talk about soil loss and the ways tillage damages soil structure and the beneficial critters underground, it made total sense to me that we are causing problems to our soil by tilling it," said Sloan, "and that we could improve soil conditions by introducing new crops into the rotation."

Cover Crops

Cover crops are one of the primary practices soil health experts recommend farmers implement into their cropping system – along with continuous no-till, conservation crop rotations, among others.

Cover crops have become very popular in recent years, with about 500,000 Iowa cropland acres covered last fall. Examples of cover crops include cereal rye, oats, ryegrass, turnips and radishes. They are planted around harvest to protect the ground from erosion and supply living roots to the soil during times when cropland is often not adequately protected. Cover crops can help with water infiltration, weed reduction, and nutrient trapping. Many livestock producers are also using them as a feed supplement in the fall and early spring.

In fall 2011, Sloan planted cover crops for the first time, aerial applying cereal rye on 125 corn acres. "Originally, I planted cover crops to improve my Soil Conditioning Index (SCI)," said Sloan. The SCI is a tool that predicts the effects of cropping systems and tillage practices on soil organic matter – a primary indicator of soil health. Sloan's local watershed group – the Lime Creek Watershed – has been active over the past decade working with local farmers to help improve water quality in local streams and creeks.

The next year Sloan doubled his cover crop acres, to 250 of his 725 cropland acres, again with cereal rye. As he became more comfortable growing cover crops, Sloan purchased a drill to plant cover crops



Buchanan County farmer Dick Sloan talks to NRCS District Conservationist Abby Beltz about the health of his soils during a June 2016 visit to his farm.

following soybean harvest. He says he felt he could consistently get a better cover crop stand using a drill than with an aerial application. "I've had success using a short season group 2 soybean, which allows me to harvest all of my beans by mid-October," said Sloan. "I can get in the field early and drill in my cover crops. I get good seed to soil contact with the drill, and I use less seed."

CSP

In 2013, then District Conservationist Roger Erickson with USDA's Natural Resources Conservation Service (NRCS) approached Sloan about signing up for the Conservation Stewardship Program (CSP). Through CSP, eligible farmers may receive a payment for agreeing to undertake additional conservation activities, called enhancements, as well as maintain and improve existing conservation systems.

Iowa farmers can choose from more than 100 enhancements that address resource concerns such as soil quality, water quality, air quality, plant health, and animals. Sloan adopted six enhancements, including the use of a cover crop mix on all 725 acres.

"I was ready to start using cover crop mixes, so CSP has been a great tool that has allowed me to learn," said Sloan. "The flexibility in the program is why I started using more than one cover crop species."

I could use two species or 12 species, and I could make adjustments year to year.”

Sloan has experimented with several mixes, but continues to include cereal rye in most mixes. He is also using winter wheat ahead of corn and triticale before soybeans, along with winter barley.

Another CSP enhancement Sloan adopted is a resource-conserving crop rotation. Sloan is rotating 20 acres of cereal rye to different plots on his farm. He is then able to harvest the rye seed and use it for cover crops in the fall. He also completes a frost seeding of red clover into the rye in late winter. “I have had great success with weed control frost seeding medium red clover,” he said.

Sloan now hosts field days and tours on his farm, and helps PFI with cover crop research. “I can tell the difference in my soils just by walking on them,” he said.

After a recent half-inch overnight rain, Sloan said he was able to apply nitrogen in his fields by noon the next day. “The soil structure and infiltration are that good,” he said. “My soil is now like one big block all knitted together with roots and other living things.”

Sloan says he stuck with his management system because of CSP requirements. “It has helped me learn and succeed,” he said. “Now, there are no practices that I would drop. I feel it would be damaging to my soils to do any tillage or to quit planting cover crops.”

For more information about conservation planning and programs, visit your local NRCS office or go to www.ia.nrcs.usda.gov.



Soybeans begin to grow through corn residue and terminated cover crop mixture that features cereal rye.

Want to unlock the secrets in YOUR soil?

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